



# UNITED STATES PATENT AND TRADEMARK OFFICE

JO  
UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
[www.uspto.gov](http://www.uspto.gov)

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/812,166	03/30/2004	Tsutomu Sasaki	250991US2DIV	3019
22850	7590	08/19/2004	EXAMINER	
OBLON, SPIVAK, MCCLELLAND, MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				CHEN, SOPHIA S
ART UNIT		PAPER NUMBER		
				2852

DATE MAILED: 08/19/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/812,166	SASAKI ET AL.	
	Examiner Sophia S. Chen	Art Unit 2852	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

**A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.**

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on 30 March 2004 (preliminary amendment).  
 2a) This action is **FINAL**.                    2b) This action is non-final.  
 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 19-49 is/are pending in the application.  
 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.  
 5) Claim(s) 19-49 is/are allowed.  
 6) Claim(s) \_\_\_\_\_ is/are rejected.  
 7) Claim(s) \_\_\_\_\_ is/are objected to.  
 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.  
 10) The drawing(s) filed on 30 March 2004 is/are: a) accepted or b) objected to by the Examiner.  
     Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
     Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).  
 11) The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
 a) All    b) Some \* c) None of:  
 1.) Certified copies of the priority documents have been received.  
 2.) Certified copies of the priority documents have been received in Application No. 10/188,818.  
 3.) Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____  |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>3/30/04</u> . | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
|  | 6) <input type="checkbox"/> Other: _____                                    |

**DETAILED ACTION**

1. This application appears to be a division of Application No. 10/188,818, filed 7/5/02. A later application for a distinct or independent invention, carved out of a pending application and disclosing and claiming only subject matter disclosed in an earlier or parent application is known as a divisional application or "division." The divisional application should set forth the portion of the earlier disclosure that is germane to the invention as claimed in the divisional application.

***Priority***

2. Applicant is reminded that in order for a patent issuing on the instant application to obtain the benefit of priority based on priority papers filed in parent Application No. 10/188,818 under 35 U.S.C. 119(a)-(d) or (f), a claim for such foreign priority must be timely made in this application. To satisfy the requirement of 37 CFR 1.55(a)(2) for a certified copy of the foreign application, applicant may simply identify the application containing the certified copy.

***Ex parte Quayle***

3. This application is in condition for allowance except for the following formal matters:

***Drawings***

4. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: a (Figure 17), 60b (Figures 23A and 24A), B (Figure 26A), and 144 (Figure 33A). Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Specification***

5. The abstract of the disclosure is objected to because the abstract exceeds 150 words. Correction is required. See MPEP § 608.01(b).
6. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
7. The disclosure is objected to because of the following informalities:

Art Unit: 2852

- a. Page 18, line 15, "52a" should be "42a".
- b. Page 38, line 9, "36b" should be "46b".
- c. Page 49, line 20, "80" should be "800".
- d. Page 68, line 18, "106" should be "60".
- e. Page 71, line 25, "Fore" should be "For".
- f. Page 76, line 16, "weep" should be "sweep".
- g. Page 77, line 11, "sweep" should be "sweep roller".

Appropriate correction is required.

***Claims***

8. Claims 26, 27, 32, 35, 37, 38, 40, 43, 45, 47, and 49 contain the following

informalities:

- a. Claim 26, last line, "cm.sup.2" and ".mu.g" (both occurrences) should be labeled as "cm<sup>2</sup>" and " $\mu$ g", respectively.
- b. Claim 27, line 2, "said weight ratio" should be "a weight ratio" because this ratio is not disclosed in claim 19.
- c. Claim 32, last line, "cm.sup.3" and ".mu.g" (both occurrences) should be labeled as "cm<sup>2</sup>" and " $\mu$ g", respectively.
- d. Claim 35, last line, "cm.sup.2" and ".mu.g" (both occurrences) should be labeled as "cm<sup>2</sup>" and " $\mu$ g", respectively.
- e. Claim 37, last line, "cm.sup.2" and ".mu.g" (both occurrences) should be labeled as "cm<sup>2</sup>" and " $\mu$ g", respectively.

- f. Claim 38, last line, "cm.sup.2" and ".mu.g" (both occurrences) should be labeled as "cm<sup>2</sup>" and "μg", respectively.
- g. Claim 40, last line, "3.5.times.10.sup.7" should be labeled as "3.5 x 10<sup>7</sup>".
- h. Claim 43, last line, "cm.sup.2" and ".mu.g" (both occurrences) should be labeled as "cm<sup>2</sup>" and "μg", respectively.
- i. Claim 45, last line, "5.0.times.10.sup.7" should be labeled as "5.0 x 10<sup>7</sup>".
- j. Claim 47, last line, "cm.sup.2" and ".mu.g" (both occurrences) should be labeled as "cm<sup>2</sup>" and "μg", respectively.
- k. Claim 49, last line, "cm.sup.2" and ".mu.g" (both occurrences) should be labeled as "cm<sup>2</sup>" and "μg", respectively.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

***Allowable Subject Matter***

9. Claims 19-49 are allowable over the prior art.
10. The following is a statement of reasons for the indication of allowable subject matter: Claim 19 is allowable over the prior art of record because the prior art of record does not teach or suggest a toner movement ratio, which is a ratio of the toner moved from a region of the developer carrier carrying the developing liquid for developing the

background to the background to the toner present in the region before development is selected such that the residual toner attracted toward the developer carrier does not cohere, in combination with the remaining limitations.

Claims 39 and 44 are allowable over the prior art of record because the prior art of record does not teach or suggest the background electric field has an absolute value equal to or smaller than a value that prevents the residual toner attracted toward the developer carrier from cohering, in combination with the remaining limitations.

***Citation of Pertinent Prior Art***

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Park et al. (US Pat. Pub. No. US 2002/0110390 A1) discloses an image forming apparatus comprising a liquid developing device containing a developer carrier, a toner removing member, and a toner removal potential of the toner removing member being determined to be greater than an exposure potential in the image region and lower than the potential in the non-image region.

Uezono et al. (US Pat. No. 6,445,897) discloses an image forming apparatus comprising a liquid developing device containing a developer carrier, a toner removing member, a polarity of a potential of the toner removing member being the same as that of the non-image area of a latent image carrier, and an absolute value of the potential of the toner removing member being greater than that of the non-image area of the latent image carrier.

Ahn et al. (US Pat. No. 6,650,856) discloses an image forming apparatus comprising a liquid developing device containing a developer carrier, a toner removing member, and a toner removal potential of the toner removing member being determined to be greater than an exposure potential in the image region and lower than the potential in the non-image region.

Yoshino et al. (US Pat. No. 6,735,408; same inventors) discloses an image forming apparatus comprising: an image carrier; a developer carrier; a high viscosity, high density developing carrier consisting of a carrier liquid and toner dispersed in the carrier liquid; electric field forming means; and toner removing member.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sophia S. Chen whose telephone number is (703) 308-7617. The examiner can normally be reached on M-F (7:00-3:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Arthur Grimley can be reached on (703) 308-1373. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sophia S. Chen  
Primary Examiner  
Art Unit 2852

Ssc  
August 18, 2004